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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,436	03/01/2002	Rene P. Helbing	10004262-1	3468

7590 05/06/2004

AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER	
FLORES RUIZ, DELMA R	
ART UNIT	**PAPER NUMBER**
2828	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Applicati n No.	Applicant(s)	
	10/087,436	HELBING ET AL.	
	Examin r	Art Unit	
	Delma R. Flores Ruiz	2828	

-- Th MAILING DATE of this communication appears on th cover sheet with the correspondence address --

Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 3 - 8,10 - 14, 16 - 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3 - 8,10 - 14, 16 - 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Pri rity under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3 – 4, 6 – 8, 10 – 11, 13 and 19 – 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stinson et al (6,603,781) in view of Suemura et al (6,429,955).

Regarding claim 1, Stinson dislcoses a multiple wavelength output light source, comprising: a laser device (see Fig. 1, Character 12 and see Fig. 4, Character 402) having a plurality of output wavelengths (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a plurality of output wavelengths, and therefore said limitations are said to be inherently disclosed in the teachings of Stinson); a demultiplexer (see Fig. 1, Character 14, and see Fig. 4, Character 406) optically coupled to the laser device, the

demultiplexer for separating the plurality of output wavelengths; and a plurality of modulators (see Fig. 1, Characters 16_1 and 16_n and see Fig. 4, Characters 404_1 and 404_n) optically coupled to the demultiplexer, the modulators associated with and configured to modulate each wavelength (Abstract, Column 1, Lines 13 – 16, Column 2, Lines 47 – 67, and Column 3, Lines 1 - 11) Stinson discloses the claimed invention except for the plurality of modulators and the demultiplexer are fabricated on one substrate and comprise one module. Suemura teaches providing his device with a plurality of modulators and the demultiplexer are fabricated on one substrate and comprise one module with a multiple wavelength output light source for the purpose of to produce a structure that is compact, inexpensive, and has readily controlled tolerances. It would have been obvious at the time of applicant's invention, to combine Suemura of teaching a plurality of modulators and the demultiplexer are fabricated on one substrate and comprise one module with a multiple wavelength output light source because as the multi/demultiplexer, a device using PLCs (Planar Lightwave Circuits) consisting of optical waveguides formed on a substrate has been developed as the most realistic device from the point of view of a small size, a light weight, and a high reliability. Of these PLCs, a silica-based PLC fabricated by depositing a silica glass film on a silicon substrate is expected as a practical optical component, since it has a small optical loss and consequently a high stability against disturbance such as heat

or vibrations. The entire multiplexer, and the entire demultiplexer, could be fabricated on a single substrate, to produce a structure that is compact, inexpensive, and has readily controlled tolerances. In addition, requirements relating to coherence length and optical path length differences, described below, are most readily achieved in such a system.

Regarding claim 3, Stinson dislcoses a plurality of output wavelengths represents the output spectrum of the laser device (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a plurality of output wavelengths represents the output spectrum of the laser device, and therefore said limitations are said to be inherently disclosed in the teachings of Stinson).

Regarding claim 4, Stinson discloses a optical filter (see Fig. 4, Character 416) configured to receive the plurality of output wavelengths and modify each wavelength to a predetermined profile (Column 6, Lines 24 – 68 and Column 7, Lines 1 – 5).

Regarding claim 6, Stinson discloses a combining device configured to combine each of the plurality of modulated wavelengths onto a single optical fiber (Column 7, Lines 57 – 63, Column 8, Lines 53 – 68, and Column 9, Lines 1 – 13).

Regarding claim 7, Stinson discloses a laser device has a spectral distribution including distinct peaks, each of the output wavelengths corresponding to a different one of the peaks (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a spectral distribution including distinct peaks, each of the output wavelengths corresponding to a different one of the peaks, and therefore said limitations are said to be inherently disclosed in the teachings of Stinson).

Regarding claim 8, Stinson discloses a method for forming a broad spectrum modulated laser output, the method comprising: providing a laser device (see Fig. 1, Character 12 and see Fig. 4, Character 402) having a plurality of output wavelengths(said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a plurality of output wavelengths, and therefore said limitations are said to be inherently disclosed in the teachings of Stinson); separating the plurality of output wavelengths; and modulating (see Fig. 1, Characters 16_1 and 16_n and see Fig. 4, Characters 404_1 and 404_n) each of the plurality of output wavelengths. Stinson discloses the claimed invention except for the plurality of modulators and the demultiplexer are fabricated on one substrate and comprise one module. Suemura teaches providing his device with a forming the laser device and performing the modulating step and the separating step on a single module with a multiple wavelength output light source for the purpose of to

produce a structure that is compact, inexpensive, and has readily controlled tolerances. It would have been obvious at the time of applicant's invention, to combine Suemura of teaching a forming the laser device and performing the modulating step and the separating step on a single module with a multiple wavelength output light source because as the multi/demultiplexer, a device using PLCs (Planar Lightwave Circuits) consisting of optical waveguides formed on a substrate has been developed as the most realistic device from the point of view of a small size, a light weight, and a high reliability. Of these PLCs, a silica-based PLC fabricated by depositing a silica glass film on a silicon substrate is expected as a practical optical component, since it has a small optical loss and consequently a high stability against disturbance such as heat or vibrations. The entire multiplexer, and the entire demultiplexer, could be fabricated on a single substrate, to produce a structure that is compact, inexpensive, and has readily controlled tolerances. In addition, requirements relating to coherence length and optical path length differences, described below, are most readily achieved in such a system.

Regarding claim 10, Stinson discloses a plurality of output wavelengths represents the output spectrum of the laser device (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a plurality of output wavelengths represents the output spectrum of the laser device, and therefore said limitations are said to be inherently

disclosed in the teachings of Stinson).

Regarding claim 11, Station discloses a modifying each wavelength to a predetermined profile (see Fig. 4, Column 6, Lines 24 – 68 and Column 7, Lines 1 – 5).

Regarding claim 13, Station discloses a combining each of the plurality of modulated output wavelengths onto a single optical fiber (Column 7, Lines 57 – 63, Column 8, Lines 53 – 68, and Column 9, Lines 1 – 13).

Regarding claim 19, Station discloses a laser (see Fig. 1, Character 12 and see Fig. 4, Character 402) that outputs plural wavelengths (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a plurality of output wavelengths, and therefore said limitations are said to be inherently disclosed in the teachings of Stinson); and modulator (see Fig. 1, Characters 16_1 and 16_n and see Fig. 4, Characters 404_1 and 404_n) means optically coupled to the laser, the modulator means for modulating each of the wavelengths independently (Abstract, Column 1, Lines 13 – 16, Column 2, Lines 47 – 67, and Column 3, Lines 1 - 11), Station discloses the claimed invention except for the laser and the modulator means are fabricated on one substrate and comprise one module. Suemura teaches providing his device with the laser and the modulator means are fabricated on one substrate and comprise one module with a multiple wavelength

output light source for the purpose of to produce a structure that is compact, inexpensive, and has readily controlled tolerances. It would have been obvious at the time of applicant's invention, to combine Suemura of teaching a laser and the modulator means are fabricated on one substrate and comprise one module with a multiple wavelength output light source because as the multi/demultiplexer, a device using PLCs (Planar Lightwave Circuits) consisting of optical waveguides formed on a substrate has been developed as the most realistic device from the point of view of a small size, a light weight, and a high reliability. Of these PLCs, a silica-based PLC fabricated by depositing a silica glass film on a silicon substrate is expected as a practical optical component, since it has a small optical loss and consequently a high stability against disturbance such as heat or vibrations. The entire multiplexer, and the entire demultiplexer, could be fabricated on a single substrate, to produce a structure that is compact, inexpensive, and has readily controlled tolerances. In addition, requirements relating to coherence length and optical path length differences, described below, are most readily achieved in such a system.

Regarding claim 20, Station discloses a separator means for spatially separating the plural wavelengths upstream of their modulation (see Fig. 1, Characters 16_1 and 16_n and see Fig. 4, Characters 404_1 and 404_n) by the modulator means (Abstract, Column 1, Lines 13 – 16, Column 2, Lines 47 – 67, and Column 3, Lines 1 - 11).

Regarding claim 21, Station discloses a combiner means for spatially combining the wavelengths as modulated by the modulator (see Fig. 1, Characters 16_1 and 16_n and see Fig. 4, Characters 404_1 and 404_n) means (Abstract, Column 1, Lines 13 – 16, Column 2, Lines 47 – 67, and Column 3, Lines 1 - 11).

Regarding claim 22, Station discloses a laser (see Fig. 1, Character 12 and see Fig. 4, Character 402) has a spectral distribution including distinct peaks, each of the wavelengths corresponding to a different one of the peaks (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a spectral distribution including distinct peaks, each of the output wavelengths corresponding to a different one of the peaks, and therefore said limitations are said to be inherently disclosed in the teachings of Stinson).

Regarding claim 23, Station discloses a optical method comprising: operating a laser to provide an output characterized by plural wavelengths; and modulating the plural wavelengths independently (See Figs. 1 and 4, Abstract, Column 1, Lines 13 – 16, Column 2, Lines 47 – 67, and Column 3, Lines 1 - 11). Station discloses the claimed invention except for forming the laser device and performing the modulating step on one substrate. Suemura teaches providing his device with forming the laser device and performing the modulating step on one substrate with a multiple wavelength output light source for the purpose of to produce a structure that is compact, inexpensive, and has

readily controlled tolerances. It would have been obvious at the time of applicant's invention, to combine Suemura of teaching forming the laser device and performing the modulating step on one substrate with a multiple wavelength output light source because as the multi/demultiplexer, a device using PLCs (Planar Lightwave Circuits) consisting of optical waveguides formed on a substrate has been developed as the most realistic device from the point of view of a small size, a light weight, and a high reliability. Of these PLCs, a silica-based PLC fabricated by depositing a silica glass film on a silicon substrate is expected as a practical optical component, since it has a small optical loss and consequently a high stability against disturbance such as heat or vibrations. The entire multiplexer, and the entire demultiplexer, could be fabricated on a single substrate, to produce a structure that is compact, inexpensive, and has readily controlled tolerances. In addition, requirements relating to coherence length and optical path length differences, described below, are most readily achieved in such a system.

Regarding claim 24, Station discloses a separating the plural wavelengths upstream of the modulating (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a separating the plural wavelengths upstream of the modulating, and therefore said limitations are said to be inherently disclosed in the teachings of Station).

Regarding claim 25, Station discloses a combining the wavelengths downstream of the modulating (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a the wavelengths downstream of the modulating, and therefore said limitations are said to be inherently disclosed in the teachings of Station).

Regarding claim 26, Station discloses a the wavelengths correspond to distinct peaks in the spectral distribution of the output of the laser, (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a wavelengths correspond to distinct peaks in the spectral distribution of the output of the laser,, and therefore said limitations are said to be inherently disclosed in the teachings of Station).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 12, 15 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Station (6, 603,781) in view of Suemura et al (6,429,955) further in view of Murakami et al (6,570,703).

Regarding claim 5, 12, 15, Station in view of Suemura discloses the claimed invention except for a Fabry Perot laser and Fabry Perot laser device and performing the modulating step and the separating step on one substrate. Murakami teaches providing his device with a Fabry Perot laser device with multiple wavelength output light source for the purpose of emitting radiation and a distributed feedback laser. It would have been obvious at the time of applicant's invention, to combine Murakami of teaching a Fabry Perot laser with multiple-wavelength output light source, and board spectrum modulated laser output because the Fabry Perot laser user to emitting radiation and a distributed feedback laser.

Regarding claim 14, Station discloses a method for forming a broad spectrum modulated laser output, the method comprising the steps of: providing a Fabry Perot laser device having a plurality of outputs, each output at a different spectral location', separating the plurality of outputs; end modulating each of the plurality of outputs with communication information resulting in a plurality of modulated outputs: and forming the Fabry-Perot laser device and performing the modulating step and the separating step

on one substrate. Station discloses the claimed invention except for forming the Fabry-Perot laser device and performing the modulating step and the separating step on one substrate. Suemura teaches providing his device with forming the Fabry-Perot laser device and performing the modulating step and the separating step on one substrate with a multiple wavelength output light source for the purpose of to produce a structure that is compact, inexpensive, and has readily controlled tolerances. It would have been obvious at the time of applicant's invention, to combine Suemura of teaching forming the Fabry-Perot laser device and performing the modulating step and the separating step on one substrate with a multiple wavelength output light source because as the multi/demultiplexer, a device using PLCs (Planar Lightwave Circuits) consisting of optical waveguides formed on a substrate has been developed as the most realistic device from the point of view of a small size, a light weight, and a high reliability. Of these PLCs, a silica-based PLC fabricated by depositing a silica glass film on a silicon substrate is expected as a practical optical component, since it has a small optical loss and consequently a high stability against disturbance such as heat or vibrations. The entire multiplexer, and the entire demultiplexer, could be fabricated on a single substrate, to produce a structure that is compact, inexpensive, and has readily controlled tolerances. In addition, requirements relating to coherence length and optical path length differences, described below, are most readily achieved in such a system.

Regarding claim 16, Station discloses a plurality of output wavelengths represents the output spectrum of the laser device (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a plurality of output wavelengths represents the output spectrum of the laser device, and therefore said limitations are said to be inherently disclosed in the teachings of Stinson).

Regarding claim 17, Station dislcoses a modifying each wavelength to a predetermined profile (see Fig. 4, Column 6, Lines 24 – 68 and Column 7, Lines 1 – 5).

Regarding claim 18, Station discloses a combining each of the plurality of modulated outputs onto a single optical fiber (Column 7, Lines 57 – 63, Column 8, Lines 53 – 68, and Column 9, Lines 1 – 13).

Response to Arguments

Applicant's arguments filed 2/2/2004 have been fully considered but they are not persuasive. Applicant's arguments with respect to claims 1, 3 - 8, 10 - 14, 16 - 26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) -272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Delma R. Flores Ruiz
Examiner
Art Unit 2828

DRFR/DW
April 28, 2004

Don Wong
Supervisor Patent Examiner
Art Unit 2828

Wilson Lee
Primary Examiner